



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/694,115	10/27/2003	Shai Amir	RADSA 20.620	2591
26304 7590 11/08/2007 KATTEN MUCHIN ROSENMAN LLP 575 MADISON AVENUE NEW YORK, NY 10022-2585			EXAMINER DUDEK JR, EDWARD J	
			ART UNIT 2186	PAPER NUMBER
			MAIL DATE 11/08/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/694,115

Applicant(s)

AMIR ET AL.

Examiner

Edward J. Dudek

Art Unit

2186

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 September 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21-26, 38-48, 50-56, 68 and 80-86 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 21-26, 38-48, 50-56, 68, and 80-86 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

This Office Action is responsive to the amendment filed on 18 September 2007 in application #10/694115.

Claims 21-26, 38-48, 50-56, 68, and 80-86 are pending and have been presented for examination.

Claims 1-20, 27-37, 49, 57-67, 69-79, and 87-91 have been cancelled.

Response to Arguments

Applicant's arguments, see page 11, filed 18 September 2007, with respect to claims 50 and 80 have been fully considered and are persuasive. The objection of claims 50 and 80 has been withdrawn.

The declaration filed on 18 September 2007 under 37 CFR 1.131 has been considered but is ineffective to overcome the Kobayashi (U.S. Patent #7,219,151) and Liu (U.S. Patent Application Publication #2005/0005044) references.

MPEP 715.04 sets forth who may make an affidavit or declaration. The following parties may make an affidavit or declaration under 37 CFR 1.131:

(A) All the inventors of the subject matter claimed.

(B) An affidavit or declaration by less than all named inventors of an application is accepted where it is shown that less than all named inventors of an application invented the subject matter of the claim or claims under rejection. For

example, one of two joint inventors is accepted where it is shown that one of the joint inventors is the sole inventor of the claim or claims under rejection.

(C) IF a petition under 37 CFR 1.47 was granted or the application was accepted under 37 CFR 1.42 or 1.43, the affidavit or declaration may be signed by the 37 CFR 1.47 applicant or the legal representative, where appropriate.

(D) The assignee or other party in interest when it is not possible to produce the affidavit or declaration of the inventor.

The declarant, Michael Ben-Shimon, is not a member of any of the parties set forth above, and is therefore not authorized to make a declaration under 37 CFR 1.131 in the instant application.

Aside from the fact the declarant is not authorized to make the declaration, the evidence submitted is ineffective to overcome the Kobayashi (U.S. Patent #7,219,151) and Liu (U.S. Patent Application Publication #2005/0005044) references.

Regarding exhibit 2: Exhibit 2 is a document titled "Virtualization Top-Level Design and Software Requirement Specifications". The cover page of this document states that it is revision 1.0, its date of issue is 1/29/01, and has a page count of 39 pages. The last page of the document (39 of 39) lists a change history. The change history indicates the date of issue is 9/6/2007, it is revision 1.0, and the page count is 39 pages. Finally, the footer of each page indicates the document was printed on 06/09/07. It is unclear what the actual date of this document is. The cover page lists revision 1.0 as being issued on 1/29/01; however, the change history lists revision 1.0 as being issued on 9/6/2007. The change history also fails to indicate what was

Art Unit: 2186

changed. The Examiner is unable to determine if the claimed subject matter was present in the document prior to the change. Finally, since the footer indicated the document was printed on 06/09/2007 it is not clear how it is possible to contain a page with a change history date of 9/6/2007. At the time the document was printed, this change had not occurred yet.

Regarding exhibit 3: the presentation does not contain information that would prove the presentation was prepared in February 2002, as indicated in the declaration.

Regarding exhibit 4: the e-mails are directed toward setting up a meeting to discuss the virtualization patent under the subject SAN-005. The declaration states that this meeting was set up after review of the presentation. There is no information in the e-mail about the presentation referred to. The presentation of exhibit 3 is titled "SDC Architecture", which does not relate to the subject of the e-mails "SAN-005".

Regarding exhibits 5 and 6: An e-mail with the subject "SAR-005" with a document attached with the file name "SAR-005-r02.doc." is presented as exhibit 5. The subject of this e-mail is not consistent with the subject of the e-mail in exhibit 4. The Examiner is unclear as to whether the two exhibits are directed toward the same patent application, and why one e-mail has the subject SAR-005 and the other has the subject SAN-005. Finally, the document presented in exhibit 5 is r02, and the document of exhibit 6 is r05. The Examiner is unclear as to what the revision history is, and what had changed between r02 and r05, and why r01 is not presented.

Moving forward, the evidence submitted is still ineffective to overcome the Kobayashi (U.S. Patent #7,219,151) and Liu (U.S. Patent Application Publication #2005/0005044) references for the following reasons.

As per MPEP 715.07 III, there are three way to establish prior invention of the claimed subject matter:

(A) actual reduction to practice of the invention prior to the effective date of the reference; or

(B) conception of the invention prior to the effective date of the reference coupled with due diligence from prior to the reference data to a subsequent (actual) reduction to practice; or

(C) conception of the invention prior to the effective data of the reference coupled with due diligence from prior to the reference data to the filing date of the application (constructive reduction to practice).

Since the date of conception is not clearly established prior to the effective date, the Examiner is unable to determine if due diligence is present or not.

The evidence submitted also does not show actual reduction to practice, i.e. showing the apparatus actually existed and worked for its intended purpose. Therefore the critical period cannot be determined, and the Examiner is unable to determine if due diligence is present.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 21-26 are rejected under 35 U.S.C. 102(e) as being anticipated by Liu et al (U.S. Patent Application Publication #2005/0005044).

As per claim 21: Liu discloses a virtualization switch for performing a plurality of virtualization services within a data path said virtualization switch comprises: a network interface (NI) (see [0050]); an iSCSI module (see [0050]); a target manager (TM) (see [0051]); a volume manager (VM) capable of translating a logic command to a list of physical commands (see [0055]), wherein said physical commands are constructed in a data structure, said data structure defines the relations between said physical commands (see [0081]); a data transfer arbiter (DTA) (see [0065]); a device manager (DM) (see [0045]); a plurality of input ports to receive incoming packets from a network (see [0045]); and, a plurality of output ports to communicate with plurality of storage devices (see [0045]).

As per claim 22: said data structure comprises at least a pointer to said storage device (see [0081]).

Art Unit: 2186

As per claim 23: said alternative command link links between at least two physical commands that can be executed in parallel (see [0087]-[0088], *the system uses a RAID configuration, therefore, it is inherent that there is a data structure that indicates what commands can be executed in parallel to fully utilize the increased throughput that a RAID system provides*).

As per claim 24: said VM further comprises a mapping schema used for translating said logic command to said list of physical commands (see [0055]).

As per claim 25: said mapping schema defines relations between virtual volumes, logical units, and said storage devices (see [0046] and [0055], *it is inherent that the device would map between logical units and physical storage devices since the storage devices that are presented to the host are virtual*).

As per claim 26: said virtual volume is at least one of: stripe volume, or mirrored volume (see [0046]).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 38-48 and 68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu et al (U.S. Patent Application Publication #2005/0005044) in view of Kobayashi

Art Unit: 2186

et al (U.S. Patent #7,219,151) and Edsall et al (U.S. Patent Application Publication #2003/0172149).

As per claim 38: Liu discloses a method for performing a plurality of virtualization services, said method being further operative to perform said virtualization services within a data path, said method comprises the steps of: receiving a logic command to be performed on at least one virtual volume, said logic command including at least a virtual address (see [0045]); scheduling said logic command for execution (see [0053]), wherein said logic command is at least a SCSI command comprising the steps of: receiving said logic command from said initiator host (see [0045]); parsing said logic command to determine at least said virtual address and said logic commands type (see [0051]); performing a check to determine if said logic command is valid (see [0085]); generating a response if said logic command is invalid, (see [0079]); and generating a data transfer request (see [0079]); translating, in one pass, said logic command to a list of physical commands (see [0051]-[0053]), wherein each of said physical command is targeted to a different storage device (see [0047], *when the storage devices are set up as a mirror, there would be one write command that is sent to each drive that makes up the mirror*); determining the amount of data to be transferred via a network (see [0081]); and, executing said physical commands on said storage devices (see [0084]). Liu fails to disclose determining if said initiator host is authorized to send said logic command, and denying the logic command if the host is unauthorized. Kobayashi discloses authenticating an iSCSI initiator to determine if the initiator is authorized to issue the logic command (see column 9, lines 14-40). If the initiator is not approved, the logic

Art Unit: 2186

command is denied (see column 9, lines 41-47). Performing authentication based on the logic command and logical units is advantageous because the user is not tied down to a specific computer at a specific location, and management of the access right is much easier (see column 2, lines 32-41). It would have been obvious to a person having ordinary skill in the art to which said subject matter pertains to have modified the system disclosed by Liu to add authentication, as disclosed by Kobayashi, to make management of the storage system easier, and to allow the user to use a computer in any location, and not have to be tied to a specific location, as disclosed by Kobayashi. The combination of Liu and Kobayashi still fail to disclose adding the logic command to a host-LU queue. Edsall discloses storing frames that are going to be transmitted to the storage devices in a queue (see [0059]). Storing the packets in a queue as opposed to directly transmitting them to the storage device allows the storage network to implement a quality of service (see [0059]). It would have been obvious to a person having ordinary skill in the art to which said subject matter pertains to have modified the combination of Liu and Kobayashi, to include a queue to store the packets that are going to be sent to the storage devices, as disclosed by Edsall, to allow the system to implement a quality of service guarantee.

As per claim 39: the combination discloses said response command comprises and iSCSI service response code indicating the type of generated error (see Liu [0050], *since the system uses the iSCSI protocol, it is inherent that the response would be in the form of an iSCSI service response code*).

As per claim 40: the combination discloses said host-LU queue comprises logic commands requested to be executed by said host on said LU (see Edsall [0058]-[0059]).

As per claim 41: the combination discloses selecting said logic command to be executed from said host-LU queue (see Edsall [0059], *since all the commands are buffered in the queue, it is inherent that the command would be selected from the queue to be executed*).

As per claim 42: the combination discloses a selection using a weighted round robin (see Edsall [0059]-[0060], *there are multiple queue to choose the instruction from, since there is a quality of service issue, the packets in the higher priority queue will be weighted heavier to be chosen first*).

As per claim 43: the combination discloses said command type is a read command (see Liu [0052]).

As per claim 44: the combination discloses said amount of data to be transferred is determined by an available space parameter (see Liu [0081]).

As per claim 45: the combination discloses said available space parameter defines the number of data bytes to be sent to the host (see Liu [0081]).

As per claim 46: the combination discloses accessing a storage device using a physical address (see Liu [0055]); retrieving from said accesses storage device the number of bytes designated in said available space parameter (see Liu [0052] and [0081]); sending the retrieved data to said host (see Liu [0052]); and repeating said steps until all data is read from said storage device (see Liu [0052], *it is inherent the*

system would continue reading the data off of the storage device and sending it to the host until all the data is retrieved).

As per claim 47: the combination discloses said physical commands are executed in parallel (see Liu [0048]).

As per claim 48: the combination discloses said command type is a write command (see Liu [0053]).

As per claim 68: Liu discloses computer executable code for performing a plurality of virtualization services stores on a recordable media, said computer executable code being further operative to perform said virtualization services within a data path, said code comprises the steps of: receiving a logic command to be performed on at least one virtual volume, said logic command including at least a virtual address (see [0045]); scheduling said logic command for execution (see [0053]), wherein said logic command is at least a SCSI command comprising the steps of: receiving said logic command from said initiator host (see [0045]); parsing said logic command to determine at least said virtual address and said logic commands type (see [0051]); performing a check to determine is said logic command is valid (see [0085]); generating a response if said logic command is invalid, (see [0079]); and generating a data transfer request (see [0079]); translating, in one pass, said logic command to a list of physical commands (see [0051]-[0053]), wherein each of said physical command is targeted to a different storage device (see [0047], *when the storage devices are set up as a mirror, there would be one write command that is sent to each drive that makes up*

Art Unit: 2186

the mirror); determining the amount of data to be transferred via a network (see [0081]); and, executing said physical commands on said storage devices (see [0084]). Liu fails to disclose determining if said initiator host is authorized to send said logic command, and denying the logic command if the host is unauthorized. Kobayashi discloses authenticating an iSCSI initiator to determine if the initiator is authorized to issue the logic command (see column 9, lines 14-40). If the initiator is not approved, the logic command is denied (see column 9, lines 41-47). Performing authentication based on the logic command and logical units is advantageous because the user is not tied down to a specific computer at a specific location, and management of the access right is much easier (see column 2, lines 32-41). It would have been obvious to a person having ordinary skill in the art to which said subject matter pertains to have modified the system disclosed by Liu to add authentication, as disclosed by Kobayashi, to make management of the storage system easier, and to allow the user to use a computer in any location, and not have to be tied to a specific location, as disclosed by Kobayashi. The combination of Liu and Kobayashi still fail to disclose adding the logic command to a host-LU queue. Edsall discloses storing frames that are going to be transmitted to the storage devices in a queue (see [0059]). Storing the packets in a queue as opposed to directly transmitting them to the storage device allows the storage network to implement a quality of service (see [0059]). It would have been obvious to a person having ordinary skill in the art to which said subject matter pertains to have modified the combination of Liu and Kobayashi, to include a queue to store the packets that are

Art Unit: 2186

going to be sent to the storage devices, as disclosed by Edsall, to allow the system to implement a quality of service guarantee.

Claims 50-56 and 80-86 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu et al (U.S. Patent Application Publication #2005/0005044) in view of Edsall et al (U.S. Patent Application Publication #2003/0172149).

As per claim 50: Liu discloses a method for performing a plurality of virtualization services, said method being further operative to perform said virtualization services within a data path, said method comprises the steps of: receiving a logic command to be performed on at least one virtual volume, said logic command including at least a virtual address (see [[0044] and [0051], *it is inherent the command would be a virtual command and contain a virtual address since the storage system, as seen by the host, is a virtual system*); translating, in one pass, said logic command to a list of physical commands (see [0055]), wherein each of said physical commands is targeted to a different storage device (see [0048]); determining using a check point list the amount of data to be transferred via a network (see [0081]); wherein said check point list further defines how data should be sent from an initiator host to said storage devices (see [0049]-[0050], *the iSCSI and SATA standards define how the data is to be sent across the links of the system to the storage devices*); executing said physical commands on said storage devices (see [0087]). Liu fails to disclose scheduling said logic command for execution. Edsall discloses storing frames that are going to be transmitted to the

Art Unit: 2186

storage devices in a queue (see [0059]). Storing the packets in a queue as opposed to directly transmitting them to the storage device allows the storage network to implement a quality of service (see [0059]). It would have been obvious to a person having ordinary skill in the art to which said subject matter pertains to have modified Liu, to include a queue that allows commands to be scheduled and to store the packets that are going to be sent to the storage devices, as disclosed by Edsall, to allow the system to implement a quality of service guarantee.

As per claim 51: said check point list comprises a linked list of data chunks (see [0066]-[0068], *the data is sent in multiple packets, and the packets must be associated with each other to allow the data to be put back together when it is received on the other end*).

As per claim 52: filing at least one data chunk with said data retrieved from the network (see [0066]-[0068], *the data is put into packets to be transmitted*); accessing said storage device using a physical address (see [0081]); writing said data chunk to said accessed storage device (see [0053]); and, repeating said steps for all data chunks in said check point list (*it is inherent that the steps would be repeated until all the data that has been sent out in the packets is written to the storage devices*).

As per claim 53: said physical commands are executed in parallel (see [0048]).

As per claim 54: said physical commands are constructed in a data structure (see [0066]-[0068]).

As per claim 55: said data structure further includes a pointer to said storage device (see [0051], *the command is parsed and the addresses are translated, therefore the physical address would be the pointer to the storage device*).

As per claim 56: said alternative command link links between at least two physical commands that can be executed in parallel (see [0087]-[0088], *the system uses a RAID configuration, therefore, it is inherent that there is a data structure that indicates what commands can be executed in parallel to fully utilize the increased throughput that a RAID system provides*).

As per claim 80: Liu discloses a computer product stored on a computer-readable medium comprising software instructions operable to enable a computer to perform a process for performing a plurality of virtualization services, said process being further operative to perform said virtualization services within a data path, said code comprises the steps of: receiving a logic command to be performed on at least one virtual volume, said logic command including at least a virtual address (see [[0044] and [0051], *it is inherent the command would be a virtual command and contain a virtual address since the storage system, as seen by the host, is a virtual system*); translating, in one pass, said logic command to a list of physical commands (see [0055]), wherein each of said physical commands is targeted to a different storage device (see [0048]); determining using a check point list the amount of data to be transferred via a network (see [0081]); wherein said check point list further defines how data should be sent from an initiator host to said storage devices (see [0049]-[0050], *the iSCSI and SATA*

Art Unit: 2186

standards define how the data is to be sent across the links of the system to the storage devices); executing said physical commands on said storage devices (see [0087]). Liu fails to disclose scheduling said logic command for execution. Edsall discloses storing frames that are going to be transmitted to the storage devices in a queue (see [0059]). Storing the packets in a queue as opposed to directly transmitting them to the storage device allows the storage network to implement a quality of service (see [0059]). It would have been obvious to a person having ordinary skill in the art to which said subject matter pertains to have modified Liu, to include a queue that allows commands to be scheduled and to store the packets that are going to be sent to the storage devices, as disclosed by Edsall, to allow the system to implement a quality of service guarantee.

As per claim 81: said check point list comprises a linked list of data chunks (see [0066]-[0068], *the data is sent in multiple packets, and the packets must be associated with each other to allow the data to be put back together when it is received on the other end*).

As per claim 82: filing at least one data chunk with said data retrieved from the network (see [0066]-[0068], *the data is put into packets to be transmitted*); accessing said storage device using a physical address (see [0081]); writing said data chunk to said accessed storage device (see [0053]); and, repeating said steps for all data chunks in said check point list (*it is inherent that the steps would be repeated until all the data that has been sent out in the packets is written to the storage devices*).

As per claim 83: said physical commands are executed in parallel (see [0048]).

As per claim 84: said physical commands are constructed in a data structure (see [0066]-[0068]).

As per claim 85: said data structure further includes a pointer to said storage device (see [0051], *the command is parsed and the addresses are translated, therefore the physical address would be the pointer to the storage device*).

As per claim 86: said alternative command link links between at least two physical commands that can be executed in parallel (see [0087]-[0088], *the system uses a RAID configuration, therefore, it is inherent that there is a data structure that indicates what commands can be executed in parallel to fully utilize the increased throughput that a RAID system provides*).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Art Unit: 2186


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edward J. Dudek whose telephone number is 571-270-1030. The examiner can normally be reached on Mon thru Thur 7:30-5:00pm Sec. Fri 7:30-4 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Kim can be reached on 571-272-4182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Edward Dudek
November 6, 2007



MATTHEW KIM
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100